

The Division of Water Resources (DWR) provides the data contained within this Local Water Supply Plan (LWSP) as a courtesy and service to our customers. DWR staff does not field verify data. Neither DWR, nor any other party involved in the preparation of this LWSP attests that the data is completely free of errors and omissions. Furthermore, data users are cautioned that LWSPs labeled **PROVISIONAL** have yet to be reviewed by DWR staff. Subsequent review may result in significant revision. Questions regarding the accuracy or limitations of usage of this data should be directed to the water system and/or DWR.

## 1. System Information

### Contact Information

Water System Name: Shelby PWSID: 01-23-010  
 Mailing Address: PO Box 207, Shelby, NC 28150 Ownership: Municipality  
 Contact Person: Michael Mull Title: WTP Supervisor/ORC  
 Phone: 704-484-6885 Fax: 704-484-6853  
 Secondary Contact: David Hux Phone: 704-484-6840  
 Mailing Address: PO Box 207, Shelby, NC 28151-0207 Fax: 704-484-6808

**Complete**

### Distribution System

Line Type	Size Range (Inches)	Estimated % of lines
Cast Iron	4-16	50.50 %
Ductile Iron	6-16	42.30 %
Galvanized Iron	2	1.10 %
Other	2-10	2.60 %
Polyvinyl Chloride	2-12	3.50 %

What are the estimated total miles of distribution system lines? 220 Miles  
 How many feet of distribution lines were replaced during 2015? 1,600 Feet  
 How many feet of new water mains were added during 2015? 635 Feet  
 How many meters were replaced in 2015? 217  
 How old are the oldest meters in this system? 15 Year(s)  
 How many meters for outdoor water use, such as irrigation, are not billed for sewer services? 506  
 What is this system's finished water storage capacity? 9.750 Million Gallons  
 Has water pressure been inadequate in any part of the system since last update? No

Shelby currently constructing a tank in East Shelby (500,000gals). Tank to be located at intersection of Kemper and Marion Streets.

### Programs

Does this system have a program to work or flush hydrants? Yes, 2 Years or More  
 Does this system have a valve exercise program? Yes, As Needed  
 Does this system have a cross-connection program? Yes  
 Does this system have a program to replace meters? Yes  
 Does this system have a plumbing retrofit program? No  
 Does this system have an active water conservation public education program? Yes  
 Does this system have a leak detection program? Yes

### Water Conservation

What type of rate structure is used? Flat/Fixed  
 How much reclaimed water does this system use? 0.000 MGD For how many connections? 0  
 Does this system have an interconnection with another system capable of providing water in an emergency? Yes

## 2. Water Use Information

**Service Area**

Sub-Basin(s)	% of Service Population	County(s)	% of Service Population
Broad River (01-1)	100 %	Cleveland	100 %

What was the year-round population served in 2015? 20,323

Has this system acquired another system since last report? No

**Water Use by Type**

Type of Use	Metered Connections	Metered Average Use (MGD)	Non-Metered Connections	Non-Metered Estimated Use (MGD)
Residential	8,331	1.371	0	0.000
Commercial	1,113	0.299	0	0.000
Industrial	81	1.885	0	0.000
Institutional	299	0.447	0	0.000

How much water was used for system processes (backwash, line cleaning, flushing, etc.)? 0.750 MGD

**Water Sales**

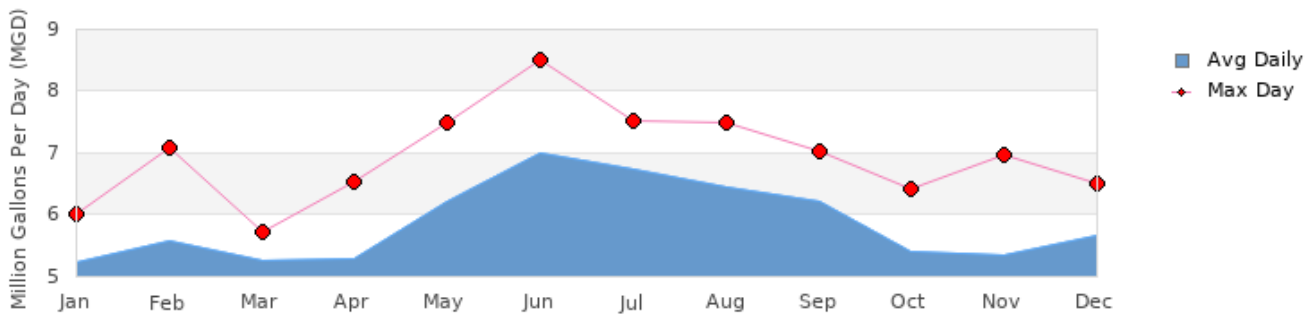
Purchaser	PWSID	Average Daily Sold (MGD)	Days Used	MGD	Contract Expiration	Recurring	Required to comply with water use restrictions?	Pipe Size(s) (Inches)	Use Type
Cleveland County Water	01-23-055	0.028	44	1.000		Yes	No	12	Emergency
Town of Boiling Springs	01-23-025	0.399	365	1.000	2034	Yes	Yes	16	Regular

**3. Water Supply Sources**

**Monthly Withdrawals & Purchases**

	Average Daily Use (MGD)	Max Day Use (MGD)		Average Daily Use (MGD)	Max Day Use (MGD)		Average Daily Use (MGD)	Max Day Use (MGD)
Jan	5.215	6.009	May	6.215	7.481	Sep	6.205	7.024
Feb	5.568	7.094	Jun	7.000	8.513	Oct	5.394	6.409
Mar	5.252	5.718	Jul	6.744	7.511	Nov	5.339	6.968
Apr	5.286	6.527	Aug	6.446	7.474	Dec	5.652	6.490

Shelby's 2015 Monthly Withdrawals & Purchases



**Surface Water Sources**

Stream	Reservoir	Average Daily Withdrawal		Maximum Day Withdrawal (MGD)	Available Raw Water Supply		Usable On-Stream Raw Water Supply Storage (MG)
		MGD	Days Used		MGD	* Qualifier	
1st Broad River	Broad River 01-5-510	5.861	365	0.000	18.000	F	0.000
Broad River		0.000	0	0.000	9.000	F	0.000

\* Qualifier: C=Contract Amount, SY20=20-year Safe Yield, SY50=50-year Safe Yield, F=20% of 7Q10 or other instream flow requirement, CUA=Capacity Use Area Permit

**Surface Water Sources (continued)**

Stream	Reservoir	Drainage Area (sq mi)	Metered?	Sub-Basin	County	Year Offline	Use Type
1st Broad River	Broad River 01-5-510	226	Yes	Broad River (01-1)	Cleveland		Regular
Broad River		884	No	Broad River (01-1)	Cleveland		Regular

What is this system's off-stream raw water supply storage capacity? 19 Million gallons

Are surface water sources monitored? Yes, Daily

Are you required to maintain minimum flows downstream of its intake or dam? Yes

Does this system anticipate transferring surface water between river basins? No

**Water Treatment Plants**

Plant Name	Permitted Capacity (MGD)	Is Raw Water Metered?	Is Finished Water Output Metered?	Source
City of Shelby	12.000	Yes	Yes	First Broad River; Broad River

Did average daily water production exceed 80% of approved plant capacity for five consecutive days during 2015? No

If yes, was any water conservation implemented?

Did average daily water production exceed 90% of approved plant capacity for five consecutive days during 2015? No

If yes, was any water conservation implemented?

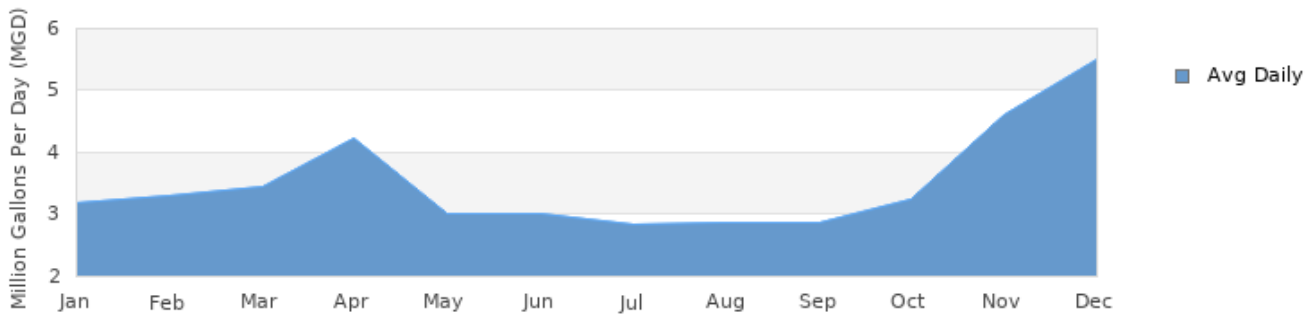
Are peak day demands expected to exceed the water treatment plant capacity in the next 10 years? No

**4. Wastewater Information**

**Monthly Discharges**

	Average Daily Discharge (MGD)		Average Daily Discharge (MGD)		Average Daily Discharge (MGD)
Jan	3.190	May	3.000	Sep	2.870
Feb	3.300	Jun	3.010	Oct	3.250
Mar	3.450	Jul	2.830	Nov	4.610
Apr	4.230	Aug	2.870	Dec	5.520

Shelby's 2015 Monthly Discharges



How many sewer connections does this system have? 8,100

How many water service connections with septic systems does this system have? 1,724

Are there plans to build or expand wastewater treatment facilities in the next 10 years? No

**Wastewater Permits**

Permit Number	Permitted Capacity (MGD)	Design Capacity (MGD)	Average Annual Daily Discharge (MGD)	Maximum Day Discharge (MGD)	Receiving Stream	Receiving Basin
NC0024538	6.000	6.000	3.360		First Broad River	Broad River (01-1)
NC0027197	0.000	0.000	0.149		Unnamed tributary 1st Broad Riv	Broad River (01-1)

**Wastewater Interconnections**

Water System	PWSID	Type	Average Daily Amount		Contract Maximum (MGD)
			MGD	Days Used	
Kingstown	01-20-055	Receiving	0.025	365	0.000
Town of Fallston	01-23-035	Receiving	0.030	365	0.000

**5. Planning**

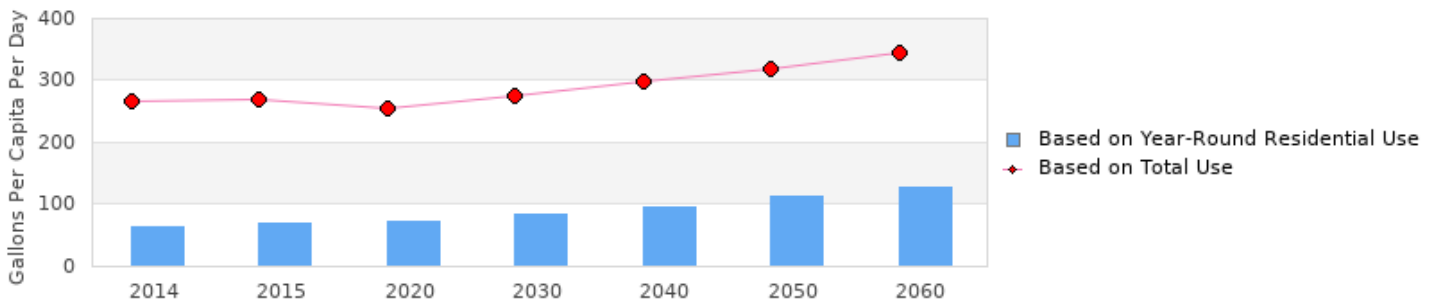
**Projections**

	2015	2020	2030	2040	2050	2060
Year-Round Population	20,323	20,562	20,651	20,740	20,828	20,920
Seasonal Population	0	0	0	0	0	0
Residential	1.371	1.477	1.714	1.989	2.309	2.679
Commercial	0.299	0.307	0.322	0.339	0.356	0.374
Industrial	1.885	1.933	2.031	2.135	2.245	2.359
Institutional	0.447	0.458	0.482	0.506	0.532	0.559
System Process	0.750	0.750	0.750	0.750	0.750	0.750
Unaccounted-for	0.707	0.343	0.370	0.477	0.432	0.470

 Demand v/s Percent of Supply

	2015	2020	2030	2040	2050	2060
Surface Water Supply	27.000	27.000	27.000	27.000	27.000	27.000
Ground Water Supply	0.000	0.000	0.000	0.000	0.000	0.000
Purchases	0.000	0.000	0.000	0.000	0.000	0.000
Future Supplies		0.000	0.000	0.000	0.000	0.000
Total Available Supply (MGD)	27.000	27.000	27.000	27.000	27.000	27.000
Service Area Demand	5.459	5.268	5.669	6.196	6.624	7.191
Sales	0.402	1.000	1.000	1.000	1.000	1.000
Future Sales		0.000	0.000	0.000	0.000	0.000
Total Demand (MGD)	5.861	6.268	6.669	7.196	7.624	8.191
Demand as Percent of Supply	22%	23%	25%	27%	28%	30%

**Shelby's Projected Gallons Per Capita Per Day (GPCD) Over Time**



The purpose of the above chart is to show a general indication of how the long-term per capita water demand changes over time. The per capita water demand may actually be different than indicated due to seasonal populations and the accuracy of data submitted. Water systems that have calculated long-term per capita water demand based on a methodology that produces different results may submit their information in the notes field.

Your long-term water demand is 67 gallons per capita per day. What demand management practices do you plan to implement to reduce the per capita water demand (i.e. conduct regular water audits, implement a plumbing retrofit program, employ practices such as rainwater harvesting or reclaimed water)? If these practices are covered elsewhere in your plan, indicate where the practices are discussed here.

Are there other demand management practices you will implement to reduce your future supply needs? The City maintains rates that encourage conservation and are full

cost recovery structures. City operates an active leak detection program.

What supplies other than the ones listed in future supplies are being considered to meet your future supply needs?

How does the water system intend to implement the demand management and supply planning components above?

**Additional Information**

Has this system participated in regional water supply or water use planning? Yes, Cleveland County interconnections/Future Water Supply 1999; Broad River Basin modeling.

What major water supply reports or studies were used for planning? City of Shelby Wastewater Report 2004; Water Treatment Plant Condition Assessment Report 2009; Water and Sewer Asset Management Plan 2011; Programs to address State Drought Requirements 2011.

City currently performing Water Plant Assessment Report to be completed in May 2016; Evaluation of Uptown Shelby Water System to be completed 2016.

Please describe any other needs or issues regarding your water supply sources, any water system deficiencies or needed improvements (storage, treatment, etc.) or your ability to meet present and future water needs. Include both quantity and quality considerations, as well as financial, technical, managerial, permitting, and compliance issues:

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